

## CPP 程式設計題

命題者：SCY

題目名稱(中文/英文)：Array to integer

主要測試觀念：

### Basics

- ☒ C++ BASICS 1
- ☐ FLOW OF CONTROL
- ☒ FUNCTION BASICS
- ☐ PARAMETERS AND OVERLOADING
- ☐ ARRAYS
- ☒ STRUCTURES AND CLASSES
- ☐ CONSTRUCTORS AND OTHER TOOLS
- ☐ OPERATOR OVERLOADING, FRIENDS, AND REFERENCES
- ☒ STRINGS
- ☐ POINTERS AND DYNAMIC ARRAYS

### Functions

- ☐ SEPARATE COMPILATION AND NAMESPACES
- ☐ STREAMS AND FILE I/O
- ☐ RECURSION
- ☐ INHERITANCE
- ☐ POLYMORPHISM AND VIRTUAL FUNCTIONS
- ☐ TEMPLATES
- ☐ LINKED DATA STRUCTURES
- ☐ EXCEPTION HANDLING
- ☐ STANDARD TEMPLATE LIBRARY
- ☐ PATTERNS AND UML

**題目說明：**Write a class that convert a string into an integer. For example, given the string “1234” the function should return the integer 1234. If you do some research, you will find that there is a function named atoi and also the stringstream class that can do this conversion for you. However, in this Programming Project, you should write your own code to do the conversion. Also write a suitable test program.

!!!Using class.

```
class Atoi {
private:
    string beTrans;
    char sign;
public:
    Atoi();
    Atoi(string s);
    void SetString(string s);
    const string GetString();
    int Length();
    bool IsDigital();
    int StringToInteger();
};
```

輸入說明：input\_main.cpp，input.txt

輸出說明：output.txt

I/O 範例：

|  | Sample Input | Sample Output |
|--|--------------|---------------|
|--|--------------|---------------|

|          |                |           |
|----------|----------------|-----------|
| 第一組測資與輸出 |                | 4         |
|          |                | 520       |
|          |                | 4         |
|          |                | 2         |
|          |                | 5         |
|          |                | 4         |
|          |                | 4         |
|          |                | 1120      |
|          |                | 4         |
|          |                | 2         |
|          |                | 11        |
|          |                | 4         |
|          |                | 4         |
|          |                | 2320      |
|          |                | 4         |
|          |                | 2         |
|          |                | 23        |
|          | input_main.cpp | 4         |
|          |                | 4         |
|          | 05             | -1020     |
|          |                | 4         |
|          | 11             | 2         |
|          |                | -10       |
|          | 23             | 4         |
|          |                | 3         |
|          | -10            | 20        |
|          |                | 4         |
|          | -11            | 1         |
|          |                | 0         |
|          | 8946           | 4         |
|          |                | 4         |
|          |                | -1120     |
|          |                | 4         |
|          |                | 2         |
|          |                | -11       |
|          |                | 4         |
|          |                | 6         |
|          |                | 894620    |
|          |                | 4         |
|          |                | 4         |
|          |                | 8946      |
|          |                | 4         |
|          |                | 9         |
|          |                | 189123120 |
|          |                | 4         |
|          |                | 7         |
|          |                | 1891231   |
|          |                | 4         |
| 第二組      | input_main.cpp | 7         |
|          |                | 4650620   |
|          | 46506          | 4         |
|          |                | 5         |

|   |                                   |  |
|---|-----------------------------------|--|
|   | -096504<br><br>56400<br><br>00494 | 46506<br>4<br>8<br>-9650420<br>4<br>6<br>-96504<br>4<br>7<br>5640020<br>4<br>5<br>56400<br>4<br>7<br>49420<br>4<br>5<br>494<br>4 |
| 第三組   |                                   |  |
| <b>附屬資料：</b><br><input checked="" type="checkbox"/> 解答程式：ArrayToInteger.cpp(檔名)<br><input checked="" type="checkbox"/> 測試資料：input.txt, output.txt       |                                   |  |
| <input type="checkbox"/> 易，僅需用到基礎程式設計語法與結構<br><input type="checkbox"/> 中，需用到多項程式設計語法與結構<br><input checked="" type="checkbox"/> 難，需用到多項程式結構或較為複雜之資料型態或結構 |                                   |  |
| <b>解題時間：30 分鐘。</b>  |                                   |  |
| <b>其他註記：</b><br>main 使用 input_main<br>class 架構僅供參考  |                                   |  |